



**ADV 485: ChargePoint, Inc.’s Comments on Proposed Schedule 45**

ChargePoint, Inc. thanks the Public Utility Commission of Oregon (“Commission”) for the opportunity to provide comments in response to Advice 16-020, Docket No. ADV 485, by which PacifiCorp d/b/a Pacific Power (“Company”) has proposed a revised transitional tariff, Schedule 45, for public DC fast charger (“DCFC”) hosts. ChargePoint supports the Company’s proposal as a reasonable means to encourage the development of a robust market for DCFCs.

ChargePoint provides the world’s largest network of electric vehicle (“EV”) charging stations in the U.S., Europe, and Australia. We design, build, and support all of the technology that powers this network, from EV charging station hardware to energy management software to a mobile app that customers can use to find stations in their area. Our work connects us with current and prospective EV charging station hosts and EV drivers nationwide. Providing EV charging opportunities is one tool that businesses can use to demonstrate their commitment to sustainability. Based on our experience working with EV charging station hosts and drivers, we have been active in Oregon, Washington, and California to recommend sound policy solutions that will foster robust, competitive markets for alternative-fueled vehicles.

DCFCs will allow drivers to charge their batteries to 80% of capacity 7 to 50X faster than conventional level 2 charging stations. Many drivers do not regularly require DCFC’s if they have access to home or workplace charging. However, DCFCs are critical for combatting range anxiety for drivers engaging in long trips, and they provide emergency charging services for drivers.<sup>1</sup> In fact, in January of this year, ChargePoint debuted a new, fast-charging modular

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<sup>1</sup> See, e.g., MAX BAUMHEFNER ET AL., NATURAL RESOURCES DEFENSE COUNCIL, DRIVING OUT POLLUTION: HOW UTILITIES CAN ACCELERATE THE MARKET FOR ELECTRIC VEHICLES (2016) 8, available at <https://www.nrdc.org/sites/default/files/driving-out-pollution-report.pdf>; IDAHO NATIONAL LABORATORY [“INL”], THE EV PROJECT, WHAT WERE THE USE PATTERNS OBSERVED AT THE HIGHLY UTILIZED DIRECT CURRENT FAST

alternative station to meet demand in this growing area of the EV market. While DCFCs remain a small share of the EV charging infrastructure market, significant investments could occur in the next few years through projects designed to create regional charging corridors in the Pacific Northwest, Mountain West, and major metropolitan areas.<sup>2</sup>

Because of how DCFCs are typically used, ChargePoint supports the Company's time-of-use rate proposal in lieu of demand charges. Demand charges can have a significant impact on the cost to charge EVs, which may or may not be passed on fully from the DCFC site host to the driver. They can be particularly onerous for small businesses that might consider becoming DCFC site hosts.<sup>3</sup> Under the Company's original Schedule 28, DCFC hosts would have paid a \$5.71/kW noncoincident demand charge, whereas Schedule 45 includes less onerous peak and off-peak time-based energy rates. Based on the charging activities in February from a sample 44 kW urban DCFC station in the Pacific Northwest, we estimate that a DCFC host who would have paid about \$550 per month under Schedule 28 will now pay about \$360 per month under Schedule 45.

Changing from demand rates to time-based energy rates provides more certainty for DCFC hosts while being fair and efficient. Although we recommend a minor modification to the proposed rate, we support the Company taking this important step in support of robust, competitive DCFC markets in Oregon.

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CHARGE SITES? (2015) 3, *available at* <https://avt.inl.gov/sites/default/files/pdf/EVProj/WhatWereTheUsePatternsObservedAtHighlyUtilizedDCFCSites.pdf>; INL, LEADING THE CHARGE: PEV CHARGING INFRASTRUCTURE ROADMAP (n.d.) 2, *available at* <https://avt.inl.gov/sites/default/files/pdf/evse/PEVChargingInfrastructureRoadmap.pdf>.

<sup>2</sup> See West Coast Green Highway, *available at* <http://www.westcoastgreenhighway.com/electrichighway.htm> (last visited March 9, 2017). See also Governors of Colorado, Utah and Nevada Announce Joint Action to Build Regional Electric Vehicle Corridor (Dec. 19, 2016), *available at* <https://www.colorado.gov/governor/news/governors-colorado-utah-and-nevada-announce-joint-action-build-regional-electric-vehicle>.

<sup>3</sup> INL, THE EV PROJECT, WHAT IS THE IMPACT OF UTILITY DEMAND CHARGES ON A DCFC HOST? (2015) 6, *available at* <https://avt.inl.gov/sites/default/files/pdf/EVProj/EffectOfDemandChargesOnDCFCHosts.pdf>.

## **1. The Schedule 45 Rate Promotes Certainty for DCFC Hosts and Their Customers.**

The proposed rate design creates more economic certainty for the business owners who might want to become hosts for public DCFCs. Eliminating a costly, difficult-to-manage demand charge will be more appealing to prospective DCFC hosts, who may bear the full burden of the costs if they do not pass it fully through to drivers. Hosts using ChargePoint equipment retain the flexibility to charge drivers for charging services in different ways that support their own business models—for example, by offering free short-term charging for drivers who are stopping by for quick errands or just need a slight boost. Additionally, the 10-year period for the rate provides regulatory certainty that is helpful to create new business models for DCFC infrastructure providers and site hosts, and to allow prospective DCFC hosts to understand the long-term costs and paybacks for their investments. These components of the rate are consistent with the criteria that Professor James Bonbright described as guideposts for good rate design—in particular, that rates should be understandable and stable.<sup>4</sup>

## **2. The Rate is Fair to DCFC Hosts.**

Moreover, time-based rates are more objectively fair to DCFC hosts than demand charges would be. Time-of-use rates are typically designed for two purposes. First, they may be designed to send price signals to customers to shift the times of their usage. Second, they may be designed to compensate the utility for the higher system costs associated with peak time usage. The second rationale is far more relevant for DCFCs, as drivers most often use DCFCs for emergency charging and are unlikely to be able to respond to price signals. For example, a gas station hosting a DCFC near a highway cannot control when a vacationing family driving an EV stops to charge. The Company's proposed time-based rate design establishes peak and off-peak prices that will

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<sup>4</sup> JAMES C. BONBRIGHT, PRINCIPLES OF PUBLIC UTILITY RATEMAKING (1961) 291.

compensate it for the provision of electricity without unduly penalizing the DCFC host. This is consistent with another Bonbright criterion: that rates should be fair in how they apportion a utility's costs to serve.<sup>5</sup> The current ratio between peak and off-peak prices is \$0.10738/kWh to \$0.06825/kWh (for the first 20,000 kWh), or 1.6:1. This ratio is modest compared to many time-of-use rates<sup>6</sup> and is reasonable given that sending price signals is not and should not be a primary goal for DCFC charging rates.

### **3. The Rate Promotes An Efficient Use of Resources.**

A stable and fair rate also promotes efficient use of resources, another Bonbright criterion.<sup>7</sup> When drivers see more site hosts add DCFCs, it has a feedback effect of encouraging drivers to purchase EVs, because charging availability (or at least, drivers' perception of it) is a well-recognized barrier to EV purchases.<sup>8</sup> The increase in EVs on the road benefits power markets in Oregon and throughout the Pacific Northwest. The *Northwest Conservation and Electric Power Plan* released by the Northwest Power & Conservation Council ("NPCC") found that regional load growth remains low and many electric utilities continue to be long on energy resources.<sup>9</sup> However, demand associated with EVs could grow significantly—NPCC projects that it could increase from 8 MW in 2015 to between 160 and 625 MW by 2035.<sup>10</sup> At the high end, this would be two-thirds

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<sup>5</sup> BONBRIGHT at 291.

<sup>6</sup> AHMAD FARUQUI & JENNY PALMER, THE DISCOVERY OF PRICE RESPONSIVENESS—A SURVEY OF EXPERIMENTS INVOLVING DYNAMIC PRICING OF ELECTRICITY (2012) 8, available at [https://papers.ssrn.com/sol3/papers2.cfm?abstract\\_id=2020587](https://papers.ssrn.com/sol3/papers2.cfm?abstract_id=2020587).

<sup>7</sup> BONBRIGHT at 291 ("Efficiency of the rate classes and rate blocks in discouraging wasteful use of service while promoting all justified types and amounts of use").

<sup>8</sup> DELOITTE, GAINING TRACTION: A CUSTOMER VIEW OF ELECTRIC VEHICLE MASS ADOPTION IN THE U.S. AUTOMOTIVE MARKET (2010) 10-13, available at [http://www.deloitte.com.br/publicacoes/2007/MFG.Gaining\\_Traction\\_customer\\_view\\_of\\_electric\\_vehicle\\_mass\\_adoption.pdf](http://www.deloitte.com.br/publicacoes/2007/MFG.Gaining_Traction_customer_view_of_electric_vehicle_mass_adoption.pdf).

<sup>9</sup> NORTHWEST POWER & CONSERVATION COUNCIL, SEVENTH NORTHWEST CONSERVATION AND ELECTRIC POWER PLAN (2016) 1-4, 11-18, available at [https://www.nwcouncil.org/media/7149940/7thplanfinal\\_allchapters.pdf](https://www.nwcouncil.org/media/7149940/7thplanfinal_allchapters.pdf).

<sup>10</sup> *Id.* at 2-6.

of the load growth NPCC expects from data centers, with much of the charging associated with EVs occurring off-peak.<sup>11</sup> Encouraging the development of robust EV markets can help the Company better utilize existing resources, both through increased DCFC charging and increased charging at home and work.

#### **4. We Recommend a Minor Modification to the Company’s Proposal.**

ChargePoint believes that the Company’s rate proposal could be improved with one minor charge that would further enhance its stability to prospective DCFC hosts. The Company has proposed to “periodically file to increase the Load size charge during the ten-year period.”<sup>12</sup> However, the timing of these filings and the criteria that the Company would use to make this change are unclear. For a small customer, the load size charge appears to represent approximately 40% of the overall monthly bill.<sup>13</sup> For the more heavily utilized Pacific Northwest DCFC station that we discussed earlier, the load size charge is about 14% of the monthly bill. To prevent rate shock to prospective DCFC hosts, ChargePoint recommends that the Company be precluded from filing rate changes more frequently than the three-year increments in which it is required to make reports. Further, the Company should be precluded from increasing the load size charge by more than 10% in any one filing. While there is no specific measurement for gradualism, the Commission has historically considered preventing rate shock to be a factor in rate design.<sup>14</sup>

#### **5. Conclusion**

ChargePoint thanks the Commission for the opportunity to comment on the Company’s proposal. Overall, we support the movement from demand-based rates to time-based rates as an

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<sup>11</sup> *Id.* at 7-10.

<sup>12</sup> Advice 16-020 – Schedule 45 – Public DC Fast Charger Delivery Service Optional Transitional Rate at 5.

<sup>13</sup> Assuming \$1.15/kW multiplied by 50 kW, which is \$57.50 out of an estimated bill of \$145.

<sup>14</sup> *See, e.g.*, In the Matter of Portland General Electric Company’s Proposal to Restructure and Reprice its Services in Accordance with the Provisions of SB 1149, Order No. 01-988, Docket UE 115, Nov. 20, 2001, at 16.



important step toward building a robust EV market in Oregon. We recommend that the Commission approve Schedule 45 with the small modification discussed above.